

BOTANY.—*New Asiatic species of the legume genus Campylotropis*.¹ P. L. RICKER, Bureau of Plant Industry, Soils, and Agricultural Engineering.

The species of *Campylotropis*, long included in the genus *Lespedeza*, are now generally recognized as composing a separate genus distinguished by flowers single at an axil and the keel geniculate instead of somewhat curved. About 66 valid species are known, which are almost entirely limited to the Provinces of Yunnan and Szechwan in China.

Scarcity of herbarium material and probable destruction of many types in Germany during the war will make adequate treatment of the genus difficult unless satisfactory duplicate types can be found, but from supposed duplicates of type numbers in American herbaria it is evident that there has been a mixup in the distribution of supposedly authentic material in many cases. Most descriptions in question are, however, fairly complete, and between them and the considerable number of sheets of types and paratypes examined it is believed that there is little probability of any of the accompanying 12 new species having been previously described.

Photographs of type sheets and natural size photographs of the flowers, leaves, and pods have been deposited in the herbaria of the New York Botanical Garden, Bailey Hortorium, Arnold Arboretum, Gray Herbarium, and Missouri Botanical Garden, unless the type sheets have been designated in these herbaria; the photographs are available as exchange for type photographs from other large herbaria.

***Campylotropis brevifolia* Ricker, sp. nov.**

Erect shrubs with gray, densely tomentose stems; petioles up to 1 cm long; leaflets obovate to obcordate, up to 12×16 mm, minutely puberulent and dark green above, densely gray-tomentose below; racemes short, few-flowered, axillary and terminal, flowers rose-purple, calyx densely gray-tomentose, 3–4 mm long, teeth acute, about equaling the tube, standard 8–10 mm long, keel and wings shorter; pods unknown.

Frutex erectus, caule griseo-tomentoso. Foliola obovata vel obcordata usque ad 12×16 mm, superne subglaberrima, subter dense griseo-tomentosa. Racemi brevi, axillares, sparsiflori; corolla roseo-purpurea, ca. 8–10 mm longa; calyx dense griseo-tomentosus, 3–4 mm longus, laciniis acutis, tubo subaequilongis.

Type no. (953) 5604, Dr. H. F. v. Handel-Mazzetti, in valley of Yalung River between Datung and Delifu, Szechwan, China, October 14, 1914, in Herbarium of the Arnold Arboretum. Also Szechwan, T. T. Yu, no. 1450, October 20, 1932. Altitude 1,600 m.

Somewhat resembling *C. stenocarpa* (Maxim.) Schindl., but that species has the calyx teeth about twice longer than the tube.

***Campylotropis filipes* Ricker, sp. nov.**

Shrubby, few branches, stems erect, striate, sparingly appressed, pubescent to glabrous, 10–30 dm tall. Stipules linear-lanceolate, 5–6 mm long; petioles 2.5–3 cm long; leaflets narrowly elliptic, lateral nearly sessile, sparingly pubescent to glabrous above and below, .4–1.3×2.2–5.2 cm, acute to obtuse at both ends, mucronate. Peduncles about 1.5 cm long; racemes terminal and axillary, 3–4 cm long; pedicels slender, appressed pubescent, 7–8 mm long; calyx hirsute, about 3 mm long, teeth mucronate, about equaling the tube; flowers reddish-purple (note on specimen); pods glabrous, margin ciliate, oblanceolate, about 4×9 mm.

Suffrutex, ramis paucis, caule erecto, 10–30 dm alto. Foliola angusto-elliptica, subsessilia, .4–1.3×2.2–5.2 cm. Racemi axillares et terminales, 3–4 cm longi. Calyx hirsutus, ca. 3 mm longus, laciniis mucronatis, tubo subaequilongis. Corolla ignota. Legumen oblanceolatum ca. 4×9 mm, margine ciliato.

Type no. 14832, T. T. Yu, Muli, Guhtzum, Yunnan, China, December 4, 1937, in Herbarium of the Arnold Arboretum. Altitude 3,100 m.

In the absence of the flowers the single fruiting pedicel at an axis distinguishes this from *Lespedeza*, and the habit and leaflets are entirely different from anything seen elsewhere in the genus *Campylotropis*.

¹ Received December 14, 1945.

Campylotropis gracilis Ricker, sp. nov.

Slender shrubs, branches erect to decumbent, new growth angular and densely tomentose, older growth becoming woody and sparingly tomentose; leaves thin, chartaceous, sparingly pubescent above, glabrous and appressed-pubescent below, petioles equaling the leaflets; leaflets oblanceolate to elliptic, up to 2.1×5 cm, apex retuse and mucronate, terminal leaflet larger; inflorescence axillary and terminal, up to 6 cm long, peduncle tomentose, pedicels slender, tomentose, 0.5–1 cm long; flowers few, (rosy?); calyx 3–4 mm long, tomentose, teeth linear-lanceolate, about equaling the tube; standard about 1.1 cm long, equaling the keel, wings shorter; pod unknown.

Frutex gracilis, ramis erectis vel decumbentibus, angulatis, dense tomentosis. Foliola elliptica vel oblanceolata usque ad 2.1×5 cm, apice retusa et mucronata. Flores pauci, calyx 3–4 mm longus, tomentosus, laciniis linearilanceolatis, tubum subaequantibus. Vexillum ca. 1.1 cm longum. Carina alas superans.

Type no. 6508, Dr. A. Henry, Hupeh, China, 1885–88, in Gray Herbarium.

Most nearly resembling *C. polyantha* (Fr.) Schindl., but that species has leaflets that are glabrous above and shorter; it also has longer calyx teeth and more spreading pubescence on the pedicels.

Campylotropis hersi Ricker, sp. nov.

Shrub with long, erect, unbranched new growth (all seen) and closely and finely appressed-pubescent stems; stipules subulate, 4–5 mm long, petioles up to 2 cm long; leaflets elliptic to ovate, apex obtuse or acute to emarginate and mucronate; racemes axillary and terminal, 4–5 mm, cone-like buds only developed. Flowers and pods unknown.

Frutex erectus, ramis dense appresse pubescentibus. Stipulae subulatae, 4–5 mm longae. Petioli usque ad 2 cm longi, foliola elliptica usque ovata, apice obtuse usque acuta vel emarginata. Racemi axillares et terminales.

Type no. 1601, Joseph Hers, Nankow Pass, northern Chihli, China, August 15, 1921, in Herbarium of the Arnold Arboretum.

Campylotropis huberi Ricker, sp. nov.

Erect shrubs, with stem many-angled, appressed-canescence. Leaves membranaceous, stipules subulate, canescent, 4 mm long;

petioles 2–4 cm long, canescent; leaflets elliptic-oblong, narrowly obtuse at both ends, up to 1.7×5 cm, sparingly puberulent to glabrous above, appressed grayish-pubescent below. Racemes axillary and terminal, peduncle up to 6 cm long with spreading fuscous pubescence, flowers crowded on the upper half; calyx 3 mm long, teeth acute, 1 mm long; corolla purple, 10–11 mm long, wings 9–11 mm long. Pod unknown.

Frutex erectus, caule multiangulato, adpresse canescente. Folia membranacea; stipulae subulatae, canescentes, ca. 4 mm longae; petioli 2–4 cm longi; foliola elliptico-oblonga usque ad 1.7×5 cm. Racemi axillares et terminales, pedunculo usque ad 6 cm longo; calyx 3 mm longus, laciniis acutis 1 mm longis; corolla purpurea, 10–11 mm longa, alis 9–10 mm longis.

Type no. B46=746, W. Huber, June 16, 1868, ex Herbarium Meisner, in Herbarium of the New York Botanical Garden. No locality given but probably vicinity of Yunnan or Szechwan, as most of the known species are from that area.

The shape of the leaflets is quite characteristic and distinct from that of any species seen.

Campylotropis longepedunculata
Ricker, sp. nov.

Erect shrub 1.2 m tall, young stems angular and densely tawny hirsute; petioles about half the length of the leaflets, densely hirsute; leaflets elliptic to oblong-elliptic, up to 3.2×6.7 cm long, dark green and glabrous above, light green and closely pubescent below, apex retuse and mucronate; racemes terminal and axillary, peduncles mostly 11–19 cm long; flowers purple, numerous on the upper half, pedicels slender, hirsute, mostly 5–8 mm long; calyx hirsute, 4–5 mm long, teeth acuminate, equaling or slightly longer than the tube; standard 8–9 mm long, keel and wings nearly equaling the standard; pods about 4×10 mm, elliptic, acute, hirsute.

Frutex erectus, caule angulato, dense fulvo-hirsuto; petioli foliolis dimidio breviores, dense hirsuti; foliola elliptica vel oblongo-elliptica usque ad 3.2×6.7 cm, apice retusa et mucronata. Calyx hirsutus, 4–5 mm longus, laciniis acuminatis, tubo subaequilongis; corolla purpurea, 8–9 mm longa. Legumen ca. 4×10 mm, ellipticum, acutum, hirsutum.

Type no. 6108, Y. Tsiang, Lung-bing, Tuyun, Kweichow, China, July 28, 1930. Also no. 8407, Y. Tsiang, Lungli, Kweichow, China, July 4, 1930. Both in Herbarium of the Arnold Arboretum.

Most nearly resembling *C. grandifolia* Schindler, but that species has the young growth glabrous or sparingly pubescent, the leaflets sparingly pubescent below, the inflorescence with spreading pubescence, and the pods obtuse.

***Campylotropis mortolana* Ricker, sp. nov.**

Erect shrub with branches at first appressed-pubescent; lower petioles as long as the leaves; stipules linear-lanceolate, about 3 mm long; leaflets elliptic to obovate, apex and base often acute, up to 2×4.5 cm, glabrous above, sparingly pubescent to glabrous beneath; inflorescence of short terminal (and axillary?) racemes; pedicels stout, 3–4 mm long, with spreading pubescence; calyx about 3 mm long, teeth 1 mm long, broadly acute; standard about 1 cm long (purple or violet?), keel 1 cm long, wings somewhat shorter; pods unknown.

Frutex erectus, ramis adpresse pubescentibus. Stipulae lineari-lanceolatae, ca. 3 mm longae; foliola elliptica vel obovata, apice et basi saepe acuta, usque ad 2×4.5 cm, superne glabra, subter parce pubescentia. Calyx ca. 3 mm longus, laciniis acutis, 1 mm longis; corolla ca. 1 cm longa.

Type sheet in Arnold Arboretum from herbarium of Camillo Schneider collected at La Mortola Garden in Italy, August 1903, bearing the name *Indigofera macroptera* which suggests that the labels were mixed in mounting. The species is most certainly from China and probably from the Provinces of Yunnan or Szechwan which are the centers of distribution of most of the species of *Campylotropis*.

The species most nearly suggests *C. prainii* but we have not seen the frequently acute apex leaflets in that species. The petioles and pedicels in that species are long and slender, the leaflets usually much darker colored, at least in drying, and the inflorescence not so compact, and it has many conspicuous long linear-lanceolate bractlets not found in *C. mortolana*.

***Campylotropis nepalensis* Ricker, sp. nov.**

Small erect shrubs with much branched tomentose stems; leaves very short petioled (2–3

mm); stipules 3 mm long, linear-lanceolate; leaflets thick, broadly cuneate, apex obtuse, mucronate and often retuse, up to 10×15 mm, glabrous above and veins very prominent, reticulated, tomentose beneath. Inflorescence in short axillary racemes, pedicels slender, ciliate, about 5 mm long; flowers (rose purple?), calyx hirsute, 4–5 mm long, teeth lanceolate, about equaling or somewhat longer than the tube, standard 8–10 mm long, keel and wings shorter; pod unknown.

Suffrutex, ramosissimus, tomentosus. Stipulae lineari-lanceolatae, 3 mm longae; foliola coriacea, late cuneata, apice obtusa, mucronata, saepe retusa, usque ad 10×15 mm, superne glabra, subter tomentosa. Calyx hirsutus, 4–5 mm longus, laciniis tubo subaequilongis; corolla (roseo-purpurea?) 8–10 mm longa, carina et alis longior.

Type no. 59, Bis Ram, Chaumala, West Nepal, India, March 23, 1929, in Herbarium of Arnold Arboretum.

The general appearance of the plant resembles *C. stenocarpa* (Klotzsch) Schindler, which has long, terminal, axillary racemes of flowers, conspicuous close, broadly lanceolate, hirsute bractlets, and with the leaflets less conspicuously reticulated and much more densely tomentose beneath.

***Campylotropis purpurascens* Ricker, sp. nov.**

Shrubs 9–15 dm tall, branches striate, densely velvety. Stipules linear-lanceolate, 6–7 mm long; petioles up to 2 cm long; leaflets coriaceous, elliptic, mucronate, velutinous above, densely sericeous below, up to 1.9×2.8 cm. Racemes arcuate, up to 8 cm long; rachis hispid, flowering nearly to the base. Calyx about 3 mm long, appressed-pubescent, teeth arcuate, about equaling the tube; corolla 7–8 mm long, purplish-blue. Fruits unknown.

Frutex 9–15 dm altus, ramis striatis, dense velutinis. Stipulae lineari-lanceolatae, 6–7 mm longae; petioli usque ad 2 cm longi; foliola coriacea, elliptica, mucronata, superne velutina, subter dense sericea, usque ad 1.9×2.8 cm. Calyx ca. 3 mm longus, adpresse pubescens, laciniis acutis, tubo subaequilongis; corolla 7–8 mm longa, purpureo-coerulea.

Type no. 17571, T. T. Yu, Shunning, Hila, Yunnan, China, September 9, 1938, in Herbarium of the Arnold Arboretum. Not closely resembling any other species of *Campylotropis*,

but the leaf shape and raceme branches suggest *Lespedeza thunbergii* (Vogel) Koehne, except for the velvety and silky characters of the leaflets.

***Campylotropis reticulata* Ricker, sp. nov.**

Erect shrub, about 6 dm tall, branches angular, densely tomentose; leaves glabrous and with conspicuous, small reticulations above, appressed-pubescent below; stipules linear-lanceolate, villose, 4 mm long; petioles villose, up to 1.5 cm long; leaflets oblanceolate to elliptic, coriaceous, up to 1.2×2.2 cm; inflorescence axillary and terminal, racemes about equaling the peduncle, 2–3 cm long; flowers pink; calyx hirsute, about 3 mm long, teeth linear-lanceolate, equaling the tube; standard about 8 mm long, equaling the keel, wings shorter; pods elliptic, acute, hirsute, margin closely ciliate, about 8 mm long.

Frutex erectus, ca. 6 dm altus; ramis angularis, dense tomentosis. Foliola oblanceolata usque elliptica, coriacea, usque ad 1.2×2.2 cm. Calyx hirsutus, ca. 3 mm longus, laciniis linearilanceolatis tubo aequilongis; vexillo ca. 8 mm longo, carina aequilongo, alis brevioris. Legumen ellipticum, acutum, hirsutum, marginem ciliatum, ca. 8 mm longum.

Type no. 9626A, A. Henry, Meng-tsze, Yunnan, China, in U. S. National Herbarium.

C. reticulata most nearly resembles *C. eriocarpa* (DC.) Schindl. but is at once distinguished by the conspicuous small, oval reticulations of the leaflets. In *C. eriocarpa* the reticulations are less conspicuous, and much more elongated, and the leaflets are darker colored. Henry's no. 9626, with appressed-pubescent stems, which is mounted on the same sheet, is *C. neglecta* Schindl.

***Campylotropis smithi* Ricker, sp. nov.**

Shrubby, branches appressed-pubescent, many angled; petioles nearly as long as the leaves, stipules lanceolate; leaflets elliptic, up to 1.1×1.8 cm, glabrous above, pubescent beneath; racemes terminal and axillary, up to 6 cm long; flowers rose-purple; pedicels up to 5 mm long, calyx hispidulous, about 5 mm long, teeth lanceolate, about equaling the tube; standard about 1 cm long, keel and wings shorter; pods unknown.

Suffrutex, ramis adpresse pubescentibus, multiangulatis. Folia petiolo subaequilonga; stipulae lanceolatae; foliola elliptica usque ad 1.1×1.8 cm, superne glabra, subter pubescentia. Flores roseo-purpurea, pedicelli usque ad 5 mm longi; calyx ca. 5 mm longus, hispidulus, laciniis lanceolatis tubo subaequilongis, vexillum ca. 1 cm longum, carina et alis brevior.

Type no. 2268, Harry Smith, near Ta-tien, Szechwan, China, July 2, 1922, in Herbarium of the Arnold Arboretum. A fragmentary specimen with somewhat obovate obtuse pods from Yunnan, T. T. Yu, no. 14885, may belong to this species.

C. smithi suggests a small-leaved form of *C. sargentii* Schindler, but our species has quite a different type of pubescence on the calyx teeth, the flowers are smaller, and the leaflets more densely pubescent below.

***Campylotropis wangi* Ricker, sp. nov.**

Erect shrub, stems glabrous below, sparingly appressed pubescent above; petioles about 1 cm long, appressed-pubescent, leaflets elliptic up to 1.2×3.3 cm, glabrous above, sparingly pubescent below; racemes axillary and terminal, glandular-tomentose, peduncles about equaling the leaves, pedicels 4–6 mm long; calyx strigose, 4–5 mm long, teeth acuminate, about equaling the tube; flowers pale purplish to reddish, about 1 cm long, keel and wings equal, standard about 9 mm long; pods elliptic, about 4×9 mm, puberulent, margin ciliate.

Frutex erectus, caulibus subter glabris, superne sparse adpresse pubescentibus. Petiolus ca. 1 cm longus; foliola elliptica usque ad 1.2×3.3 cm, superne glabra, subter sparse pubescentia. Calyx strigosus, 4–5 mm longus, laciniis acuminatis tubo subaequilongis. Flores pallido-purpurei usque rubescentes, ca. 1 cm longi, aliis carinam aequantibus, vexillo ca. 9 mm longo. Legumen ellipticum ca. 4×9 mm, puberulentum, margine ciliata.

Type no. 70331, C. W. Wang, A-tun-tze, Yunnan, China, 1,300–3,000 m elevation, September 1935, in Herbarium of the Arnold Arboretum, and probably no. 63456, C. W. Wang, Ta-li Hsien, May 1935.

Somewhat resembling *C. capillipes* (Franch.) Schindler, but leaflets more elongated and peduncles and pedicels with spreading glandular pubescence instead of appressed.